

REMARKS

Reconsideration of the present application is respectfully requested.

Applicant submitted a Supplementary Information Disclosure Statement and an accompanying Form PTO-1449 on September 24, 2001. However, the Examiner's Office Action of October 24, 2002 does not include an initialed copy of this Form PTO-1449. Applicant has resubmitted a copy of this Form PTO-1449 along with a Request For Return Of Initialed Form PTO-1449 requesting that the Examiner initial the copy of the Form PTO-1449 and return it to the undersigned at the earliest convenience.

The Examiner has objected to the title of the invention. Applicant has amended the title to be "Direct Current Motor Yoke Housing Having Groove-Like Reduced Thickness Portions" as suggested by the Examiner. Therefore, it is respectfully requested that the Examiner's objection to the title be withdrawn.

Claims 1, 3 – 4, 8 and 10 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,547,687 to Arai. For the reasons discussed below, these claims, as amended, are now in condition for allowance.

Claims 1 and 10 have been amended to recite the novel embodiment shown in, for example, FIGS. 1 and 3 in which each of the groove-like reduced thickness portions 4f extends along a center line of a corresponding one of said plurality of primary magnetic poles 5, 6 and has an uncovered outer surface on an outside of said yoke housing 4 to expose said entire outer surface of said groove-like reduced thickness portion 4f to air. The groove-like reduced thickness portions 4f reduce the magnetic flux Φ_2 induced by the armature magnetomotive force by providing enhanced magnetic resistance. (See Pg. 12, Line 23).

Arai discloses a micromotor that includes a yoke 2 having receptor portions 3a, 3b for receiving cooling medium pipes C. (See Col. 2, Lines 59 – 61). Although the receptor portions 3a, 3b have a groove-like reduced thickness, the receptor portions 3a, 3b are covered with the cooling medium pipes and are therefore not exposed to air. Further, Arai fails to disclose that the receptor portions 3a, 3b provide an enhanced magnetic resistance for reducing magnetic flux Φ_2 induced by the armature magnetomotive force.

Therefore, because Arai fails to disclose that the receptor portions 3a, 3b are exposed to air and that they provide an enhanced magnetic resistance for reducing magnetic flux Φ_2 induced by the armature magnetomotive force, it is respectfully requested that the rejection of claim 1 and 10 as well as dependent claims 3 – 4 and 8 under 35 U.S.C. 102(b) be withdrawn.

Claims 5 – 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of U.S. Patent No. 4,933,582 to Hata et al (Hata). This rejection is respectfully traversed.

Regarding the rejection of claim 5 – 7, these claims depend from amended claim 1. Therefore, the rejection of claims 5 – 7 should be withdrawn for the above-mentioned reasons with respect to claim 1.

Further regarding the rejection of claims 6 – 7, these claims recite the novel embodiment disclosed, for example, on pg. 21, lines 15 – 20 in which the wall thickness of each flat section 4a of the yoke housing 4 is larger than the wall thickness of the arcuate section 4b.

Arai discloses a yoke housing having a uniform wall thickness. (See FIG. 1). However, as mentioned by the Examiner, Arai fails to teach or suggest a yoke housing having flat sections and arcuate sections.

Hata discloses a yoke housing having a casing 2 having flat faces 10, 11 and arcuate portions. However, Hata fails to teach or suggest that the thickness of the flat faces 10, 11 is

greater than the thickness of the arcuate portions. Rather, as shown by FIG. 2, the wall thickness of both the flat faces 10, 11 and the arcuate portions appears to be equal.

Further, Applicant would like point out that the recited thickness of the yoke housing leads to improved and unexpected results. A *prima facie* case of obviousness is rebutted by proof of unexpected or superior results. (See MPEP 2144.09, Aug. 2001). For example, the recited thickness prevents an increase in magnetic resistance against a magnetic flux Φ_1 of the permanent magnets and reduces the size and weight of the motor main body 2. (See Pgs. 21 – 22). The magnetic flux Φ_1 of the permanent magnets should be distinguished from the magnetic flux Φ_2 induced by the armature magnetomotive force. (See Pgs. 11 – 12).

Therefore, because Arai and Hata fail to teach or suggest a yoke housing having a wall thickness of each flat section that is larger than the wall thickness of the arcuate section and because of the superior and unexpected results resulting therefrom, it is respectfully requested that the rejection of claims 6 – 7 under 35 U.S.C. 103(a) be withdrawn.

Claim 2 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of common knowledge in the art. For the reasons discussed below, this claim, as amended, is now in condition for allowance.

Claim 2 has been amended to recite structural characteristics of the groove-like reduced thickness portions rather than the methodology of forming them. Amended claim 2 depends from amended claim 1. Therefore, the rejection of claim 2 should be withdrawn for the above-mentioned reasons with respect to amended claim 1.

Claim 9 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Hata. This rejection is also respectfully traversed.

Claim 9 recites the novel embodiment disclosed, for example, pg. 13, lines 16 – 20 in which the wall thickness of each groove-like reduced thickness portion is equal to or less than 40 % of the wall thickness of each flat section.

Arai and Hata fail to teach or suggest the recitation of claim 9 as mentioned by the Examiner. The Examiner has asserted that the recitation of claim 9 would have been obvious to one skilled in the art because, as held in In re Aller, when the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routines skill in the art.

Applicant strongly traverses the Examiner's assertion that In re Aller is applicable to claim 9. More specifically, the Examiner has not yet established that the general condition of varying the wall thickness of the yoke housing is disclosed in the prior art. As mentioned above with respect to claims 6 – 7, Arai and Hata fail to teach or suggest such a feature.

Further, claim 9 depends from amended claim 1.

Therefore, because the Examiner has not established that the recited wall thickness would have been obvious to one skilled in the art and because of the above-mentioned reasons with respect to amended claim 1, it is respectfully requested that the rejection of claim 9 be withdrawn.

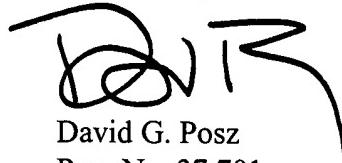
New claims 13 – 20 are presented for examination. These claims recite features that further distinguish the present invention from the art of record. Support for new claims 13 – 15 is shown in, for example, FIG. 3. Support for new claims 16 – 20 is shown in, for example, FIGS. 3 and 11.

Claims 11 – 12 were withdrawn per the election on August 2, 2002. However, claims 11 – 12 depend from amended claim 1. Therefore, these claims should also be allowed for the above-mentioned reasons with respect to amended claim 1.

In view of the above amendments and remarks, the present application is now believed to be in condition for allowance. A prompt notice to that effect is respectfully requested.

Permission is hereby given to charge any unanticipated fees to Deposit Account No. 50-1147.

Respectfully submitted,



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